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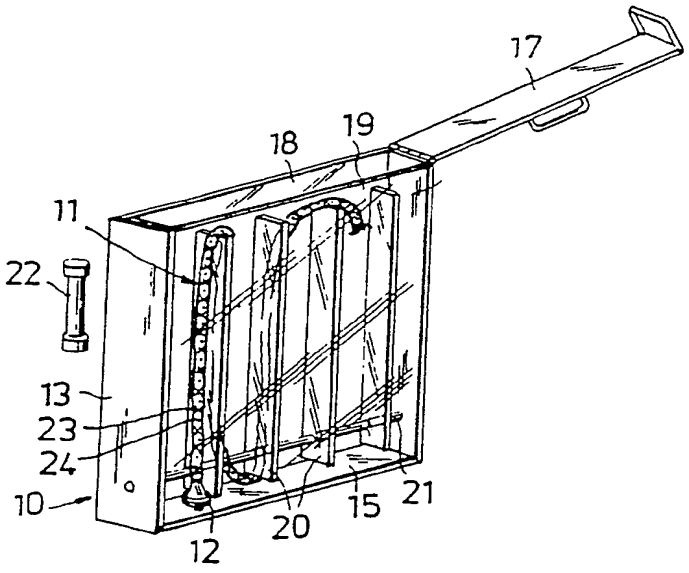
(54) Title: IMPROVEMENTS IN WATER HOSES AND THE LIKE AND A SUPPORT OR STORING DEVICE FOR SUCH HOSES



(57) Abstract

A smoke diver hose (11) which has a marking or identification (34, 24) running longitudinally of the hose and essentially continuously. A hose basket (10) for the smoke diver hose (11) has at least one light permeable wall and a light source (22) for activation of the luminous paint may be adapted to be switched on with the switching on of the ignition system of the fire-fighting vehicle.

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Improvements in water hoses and the like and a support or storing device for such hoses

The present invention relates to improvements in water hoses and the like, particularly so called smoke diver hoses. The invention has been created in connection with smoke diver hoses and therefore, for simplicity, it will be disclosed below with reference to such hoses, however without being restricted to exactly such hoses.

A principal object of the invention has been to provide a smoke diver hose which is able to afford an increased security to the smoke diver.

A second, but nonetheless important object of the invention has been to provide an identification possibility with smoke divers hoses, either with respect to certain quality properties or with respect to propriarity etc.

A further object of the invention has been to provide a support or storing means for smoke diver hoses, which support or storing means is deviced in a special manner to permit a rational utilization of smoke diver hoses according to the invention.

To the above recited ends a smoke diver hose according to the invention has been provided, which hose has marking or indication of luminous material, preferably a luminous paint, running essentially continuously longitudinally of the hose.

According to the invention it is preferred that the marking takes the shape of threads which are vowen into the hose material and which are colored by a luminous paint.

The marking make take the shape of individual points of luminous paint which are closely spaced longitudinally of the hose, if desired combined with straight or screw line shaped mark lines on the outer surface of the hose.

A support or storing means for smoke diver hoses according to the invention is preferably deviced to comprise a hose basket with at least one light permeable wall and at least some means for separating the hose turns in such a manner that the hose becomes accessible for

activation of the luminous paint by means of light.

According to the invention it may be feasible to complete the device for storing of the smoke diver hose with means for automatic switch on of the activating light source with the switching on of the ignition system of the fire-fighting vehicle.

The invention will be disclosed in more details with reference had to the accompanying drawing.

Fig. 1 illustrates one embodiment of a storing means, picked as an example, in the shape of a hose basket 10, in which a smoke diver hose according to the invention, generally denoted 11, is stored in rest position. As is usual the hose has suitable couplings 12 at the ends thereof.

In the example shown the hose basket 10 comprises end walls 13, 14 and a bottom wall 15 of suitable aluminum profiles, and a cover 17 with a handle secured to one end wall 14 by means of a hinge 16. In the example the side walls 18, 19 of the hose basket consist of plexiglass or any similar material which is well light permeable. The hose lies in folds or vawes within the hose basket, and between the folds of vawes there are disposed a plurality of intermediate plates 20 which may be threaded on to a supporting bar 21. Preferably, according to the invention, also these intermediate plates 20 consist of plexiglass or any other similar material which is well light permeable.

According to the invention the hose basket 10 is adapted to be placed in a suitable hose box in a material space within the fire-fighting vehicle, if desired together with one or more similar hose baskets. Within the hose box there are disposed, close to the respective position of the hose basket or baskets, one or more light sources 22, which are adapted to throw light on the hose or hoses for an adequate period of time before each occasion of use.

As is shown in fig. 2 the hose 11 picked as an example is proved with a pattern of threads 23, which e.g. may be vowen in, and which are coloured by a so called luminous material, or which is provided with markings 24 which may be painted on or put on in any other way, e.g.

in the shape of points, small rectangles or the like, or combinations of lines and dots in any desired pattern. It is essential, according to the invention, that the marks or indications that have been put on in one or another manner, consists of or comprise a luminous print in one or more colours, preferably yellow-green and/or red, which colours, after activation thereof, have been found to be particularly well visible in dark and smoky air.

It should be mentioned here with respect to the paint that, according to the invention, it is a question of a paint which following an activation in light for a comparatively short period of time - such of the order of down to only a few tenths of seconds - and accumulation of the light energy posses the ability to emit for a comparatively long period of time, e.g. 15 - 30 minutes, an oftentimes surprisingly strong light which is well visible and thus may act as a lead-light. In this respect the luminous paint differs from the so called fluorescent materials, the light emission of which is comparatively bad per se and ceases completely after a rather short period of time, such as of the order of a few seconds.

The light source 22 may comprise e.g. an ordinary electric glow bulb or a fluorescent tube and the power supply could ge either direct or through a transformer from the ordinary electric net of the fire-fighting vehicle, or alternatively from the suitable accumulator. Further, the light source may be switched on either permanently with the switching on of the vehicle ignition system, or may it have a separate switch.

In use the hose basket with the luminous hose is placed in its hose box in the material space of the fire-fighting vehicle. The light source 22 is switched on with the switching on of the fire-fighting vehicle, or is it swithched on by means of its separate switch. Hereby the luminous hose becomes activated rather quickly. When the smoke divers are about to enter they grip the hose basket 10 with the luminous hose 11, which is coupled to the pump of the fire-fighting vehicle, whereupon the divers may advance into the building.

It will be realized that the some diver hose according to the invention increases the personal safety in that the smoke divers, in a hazardous moment, such as when all is in flames, on collapse of a building etc., may quickly follow the luminous hose to get out. Similarly, if need arises to rescue the smoke divers, one may easily follow the way they have taken into a building, viz. by following the luminous hose.

A secondary advantage which is achieved by the smoke diver hose according to the invention is that the luminous marking may be used to identify the hose, such that a certain marking corresponds to e.g. a predtermined pressure class, length, dimension etc., and so that a certain marking defines the propriarity of the hose.

A plurality of modifications and alterations as to details may be carried out within the scope of the invention.

CLAIMS

1. An improved water hose, particularly a so called smoke diver hose, **characterized** in that the hose (11) is provided with a marking or identification (23, 24) of a luminous material, particularly a lominous paint, running longitudinally of the hose and essentially continuously.

2. A water hose as claimed in claim 1, **characterized** in that the marking (23) is in the shape of thread, that are vowen into the hose material and are coloured by a luminous paint.

3. A water hose as claimed in claim 1 or 2, **characterized** in that the marking is in the shape of individual points (24) of a luminous paint closely spaced longitudinally of the hose, if desired in combination with straight or screw line shaped mark lines on the outer surface of the hose.

4. A storing device for storing of a smoke diver hose according to on or more of claims 1-3, **characterized in** that it comprises a hose basket (10) having at least one light permeable wall and at least some means for separation of the hose turns in such a manner that the hose becomes accessible for activation of the luminous paint by means of light.

5. A device as set forth in claim 4, **characterized in** means for a automatic switch on of the activating light source (22) with the switching on of the ignition system of the fire-fighting vehicle.

Fig. 1

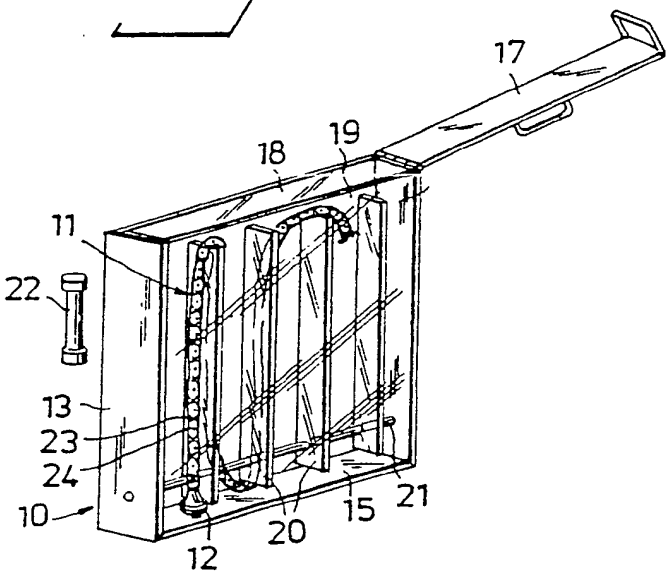
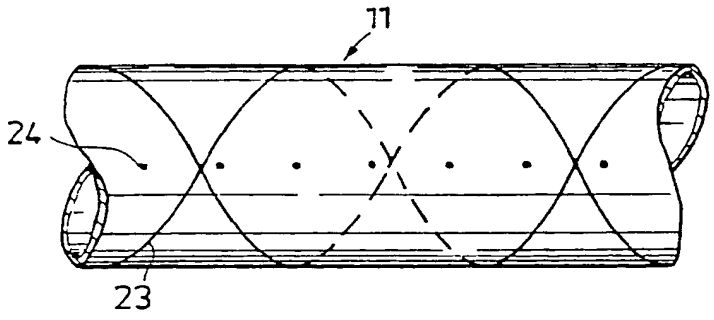


Fig. 2



INTERNATIONAL SEARCH REPORT

International Application No PCT/SE89/00304

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) [6]

According to International Patent Classification (IPC) or to both National Classification and IPC 4

F 16 L 11/12

II. FIELDS SEARCHED

Minimum Documentation Searched [7]

Classification System	Classification Symbols
IPC 4	F 16 L 11/00, 11/12
US Cl	138: 103, 104, 177, 178

Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched [8]

SE, NO, DK, FI classes as above

III. DOCUMENTS CONSIDERED TO BE RELEVANT [9]

Category [10]	Citation of Document, [11] with indication, where appropriate, of the relevant passages [12]	Relevant to Claim No. [13]
X, Y	AT, B, 209 647 ("SEMPERIT" ÖSTERREICHISCH-AMERIKANISCHE GUMMIWERKE AG) 25 June 1960 See whole document.	1, 4
Y	DE, A, 1 750 079 (CONTINENTAL GUMMI-WERKE AG) 29 April 1971 See page 3, line 7; page 5, lines 7-24, figures 1-3.	2, 3
A	EP, A1, 0 126 306 (CONTINENTAL GUMMI-WERKE AG) 28 November 1984	
Y	EP, A1, 0 143 247 (CONTINENTAL GUMMI-WERKE AG) 5 June 1985 See page 3, lines 6-19.	2, 3

* Special categories of cited documents: [10]

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

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IV. CERTIFICATION

Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report
1989-08-16	1989 -11- 13
International Searching Authority	Signature of Authorized Officer
Swedish Patent Office	Axel Lindhult

Form PCT/ISA/210 (second sheet) (January 1985)

FURTHER INFORMATION CONTINUED FROM THE SECOND SHEET

V. ☐ OBSERVATIONS WHERE CERTAIN CLAIMS WERE FOUND UNSEARCHABLE [1]

This international search report has not been established in respect of certain claims under Article 17(2) (a) for the following reasons:

1. ☐ Claim numbers . because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claim numbers ..... because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claim numbers..... because they are dependent claims and are not drafted in accordance with the second and third sentences of PCT Rule 6.4(a).

VI. ☒ OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING [2]

This International Searching Authority found multiple inventions in this international application as follows:

1) Claims 1-4: A luminous hose and storing means for such hose.
2) Claim 5: Means to activate the luminous colour of a hose.

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims of the international application.

2. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims of the international application for which fees were paid, specifically claims:

3. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claim numbers:

4. ☒ As all searchable claims could be searched without effort justifying an additional fee, the International Searching Authority did not invite payment of any additional fee.

Remark on Protest

☐ The additional search fees were accompanied by applicant's protest.

☐ No protest accompanied the payment of additional search fees.